

REMARKS

The claims now pending in the application are Claims 16 to 20. Claim 16 is the only independent claim. Claims 1 to 15 previously have been cancelled. Claim 16 has been amended herein.

In the Official Action dated March 11, 2004, Claims 16 and 17 were rejected under 35 U.S.C. § 102(b), as anticipated by U.S. Patent No. 4,272,787 (Michael et al.), and Claims 18 to 20 were rejected under 35 U.S.C. § 103(a), as unpatentable over the Michael et al. in view of U.S. Patent No. 5,162,914 (Takahashi et al.). Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

The rejection of the claims over the cited art is respectfully traversed. Nevertheless, without conceding the propriety of the rejections, Claim 16 has been amended. Support for the amendments may be found in the original disclosure. No new matter has been added.

Independent Claim 16 as currently amended is directed to an image sensor that picks up an image corresponding to an optical image and produces a first field image signal and a second field image signal. A synthesizing circuit synthesizes the first and second image signals to form a synthesized image signal having a synthesized exposure and a detecting circuit detects an amount of motion vector and produces a detection signal in comparison with a predetermined threshold. A control circuit selects a non-synthesizing mode if the amount of motion vector is more than the predetermined threshold and a synthesizing mode if the amount of motion vector is less than the predetermined threshold level.

In Applicant's view, Michael et al. discloses A T.V. picture freeze system that captures a video frame having first and second fields. Movement is detected between fields for each picture point and data indicative of any movement is stored and is used on

read out to determine whether the picture information is taken from a single field, when movement has occurred or from both fields when movement has not occurred for that portion of the picture.

According to the invention defined in Claim 16 as currently amended, an image sensor picks up first and second field images having different exposures and a synthesizing circuit synthesizes the first and second field signals to form a synthesized field image signal having a synthesized exposure. A control circuit selects a non-synthesizing mode if a detected amount of a motion vector is more than a predetermined threshold and selects a synthesizing mode of producing a synthesized field image signal having a synthesized exposure if the detected amount of motion vector is less than the predetermined threshold value.

Michael et al. may disclose with respect to Figs. 2 and 5 switching between selection of a single field and selection of both fields according to detected motion data. In Michael et al., when no movement has been detected, both fields are used. When movement has been detected, only a single field is used for any parts of the picture where movement has occurred. It is a feature of Claim 16 that an image sensor picks up two fields that have different exposures. In Michael et al., there is no suggestion of a first field image signal and a second field image signal having different exposure from the first field signal as in Claim 16.

Further, Michael et al. only teaches using one field or two fields based solely on whether movement at a picture point is detected but is devoid of any suggestion of forming a field image signal having a synthesized exposure as in Claim 16 for a detected motion vector less than the predetermined amount and not synthesizing such a field image signal for a detected motion vector more than the predetermined threshold. The formation of a synthesized field image signal having a synthesized exposure in the present invention is based on first and second field images of different exposures. As disclosed at least at

lines 8-11 of page 26 of the specification, in synthesizing an image, a video signal of either the even or odd field having the proper exposure is selected. The Michael et al. disclosure is devoid of any suggestion of synthesizing two field with respect to proper exposure.

Accordingly, it is not seen that Michael et al.'s selecting parts of a single stored field for read out responsive to detected motion and selecting two stored fields for read out when there is no detected motion in any manner teaches of suggests the feature of Claim 16 of a control circuit that selects a non-synthesizing mode-if the amount of motion vector is less than a predetermined threshold level and a synthesizing mode of producing a synthesized field image signal having the synthesized exposure (i.e., a video signal of either an even or odd field having proper exposure is selected) if the amount of motion vector is more than the predetermined threshold level. It is therefore believed that Claim 16 as currently amended is completely distinguished from Michael et al. and is allowable thereover.

In Applicant's opinion, Takahashi et al. discloses an image sensing device that is adapted to compose an appropriate single picture from plural pictures of different exposures obtained from the same subject in which camera operation is controlled using as a reference the signal of one of the plural pictures of different exposures.

Takahashi et al. may teach forming a picture from plural pictures of different exposures obtained in a single field. The Takahashi et al. disclosure, however, is devoid of any suggestion of selecting one of non-synthesizing and synthesizing modes in accordance with a detected amount of motion vector in comparison with a predetermined threshold as in Claim 16 as currently amended. Further, it is not seen that the addition of Takahashi et al.'s picture forming from other pictures devoid of any suggestion of selecting synthesis or non-synthesis based on the amount of motion vector to Michael et al.'s selection of a single field or a pair of fields based on motion devoid of any suggestion of a synthesizing mode in which a synthesized field image signal having synthesized exposure responsive to a

detected amount of motion vector less than a predetermined amount and a non-synthesis mode responsive to a detected amount of motion vector more than a predetermined amount could possibly suggest the features of Claim 16. It is therefore believed that Claim 16 as currently amended is completely distinguished from any possible combination of Michael et al. and Takahashi.

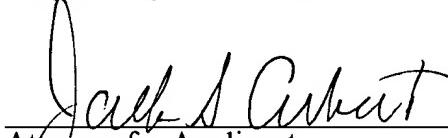
For the above reasons, Applicant submits that independent Claim 16 is allowable over the cited art.

Claims 17 to 20 depend from Claim 16 and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of its respective base claim, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Applicant believes that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submits that the application is in allowable form. Favorable consideration of the claims and passage to issue of the present application at the Examiner's earliest convenience earnestly are solicited.

Applicant's attorney, C. Phillip Wrist, may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

  
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